

**SUN UP BAY RESORT (PWSNO 1280185)
SOURCE WATER ASSESSMENT REPORT**

November 20, 2001



**State of Idaho
Department of Environmental Quality**

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SOURCE WATER ASSESSMENT FOR SUN UP BAY RESORT

Under the Federal Safe Drinking Water Act Amendments of 1996, all states are required by the U.S. Environmental Protection Agency (EPA) to assess every source of public drinking water for its relative sensitivity to contaminants regulated by the Act. The Idaho Department of Environmental Quality is completing the assessments for all Idaho public drinking water systems. The assessment for your particular drinking water source is based on a land use inventory within the spring recharge zone, your water quality history, construction characteristics associated with your spring and site specific sensitivity factors associated with the aquifer your water is drawn from.

This report, *Source Water Assessment for Sun Up Bay Resort* describes the public drinking water source, potential contaminant sites located within your watershed, and the susceptibility (risk) that may be associated with any potential contaminants. This assessment, taken into account with local knowledge and concerns, should be used as a planning tool to develop and implement appropriate protection measures for this system. **The results should not be used as an absolute measure of risk and are not intended to undermine the confidence in your water system.**

Potential Contaminant Inventory. The Sun Up Bay Resort public water system, located on the western shore of Lake Coeur d'Alene in the vicinity of Worley, Idaho, serves two year-round and 52 seasonal homes. The resort season is from April 15 to October 15. A spring at the base of a hillside on the northeastern side of Sun Up Bay supplies water for the resort. The recharge zone for the spring was modeled as a small watershed with topographic boundaries delineated from a 1:24,000 U.S. Geological Survey map (See Figure 1 on page 4).

Other than naturally occurring microbial contaminants that are found everywhere, the only potential contaminant sources documented inside the watershed boundary are the resort septic system, an underground storage tank for petroleum products, and a gravel road crossing the upper portion of the watershed about 0.6 miles from the spring intake. Both the septic system components and the petroleum storage tank appear to be located well away from the spring intake. The intake is about 100 feet from the lake.

Soils in the spring recharge zone are predominately poorly drained to moderately well drained. Soils in these categories tend protect against migration of contaminants in the ground water. The watershed is wooded.

Water Quality History. Sun Up Bay Resort, under regulation as a non-community transient public water system, is required to monitor quarterly for bacterial contamination during its open season. The water is chlorinated prior to distribution. No positive distribution system samples are on record for the system. The system test annually for nitrates. Results have ranged from undetectable levels to a concentration of 2.05 mg/l since 1994. The highest concentrations have occurred during the winter months and the lowest concentrations in the summer. The Maximum Contaminant Level (MCL) for Nitrate is 10.0 mg/l.

System Construction. The improved spring that supplies Sun Up Bay Resort has an infiltration gallery consisting of 9 concrete drywells buried in a grassy area on Lot #10, Pine Terrace Lots. The spring box access riser extends 3 inches above the floor of a poured concrete lined pit with a wooden cover.

A sanitary survey of the system in June 1998 recommends increasing the height of the riser to at least 12 inches above the pit floor and fitting it with an overlapping metal cover. The concrete pit where the access is located drains to daylight. The pit wall extends 10 inches above grade. It is covered with an overlapping metal cover

Susceptibility to Contamination. A susceptibility analysis DEQ conducted for the Sun Up Bay Resort spring, incorporating information from the public water system file and the potential contaminant inventory, found the spring to be at high risk for microbial contamination. The resort chlorinates the water to deal with this problem. The spring is at low risk for contamination with other classes of regulated contaminants. The susceptibility analysis worksheet for the spring on page 5 of this report shows how the spring was scored. Formulas used to compute the final susceptibility scores are at the bottom of the worksheet.

Source Water Protection. This assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what ranking a source receives, protection is always important. Whether the source is currently located in a “pristine” area or an area with numerous industrial and/or agricultural land uses, the way to ensure good water quality in the future is to act now to protect valuable water supply resources.

For Sun Up Bay Resort source water protection activities should focus first on the improvements to the spring access riser outlined in the 1998 sanitary survey. Raising the height of the access and equipping it with an overlapping cover will provide better protection from runoff that could contaminate the spring. The spring is potentially "Ground Water Under Direct Influence of Surface Water" according to a Panhandle Health District inspection report dated February 1, 2000. The spring needs to be tested to determine whether it is directly influenced by Lake Coeur d'Alene. Pictures in the public water system file show the concrete pit where the spring access is located surrounded by lush green grass. It is important to maintain the area around the intake free from the use of fertilizers or pesticides that could percolate through the soil to contaminate the ground water feeding the spring.

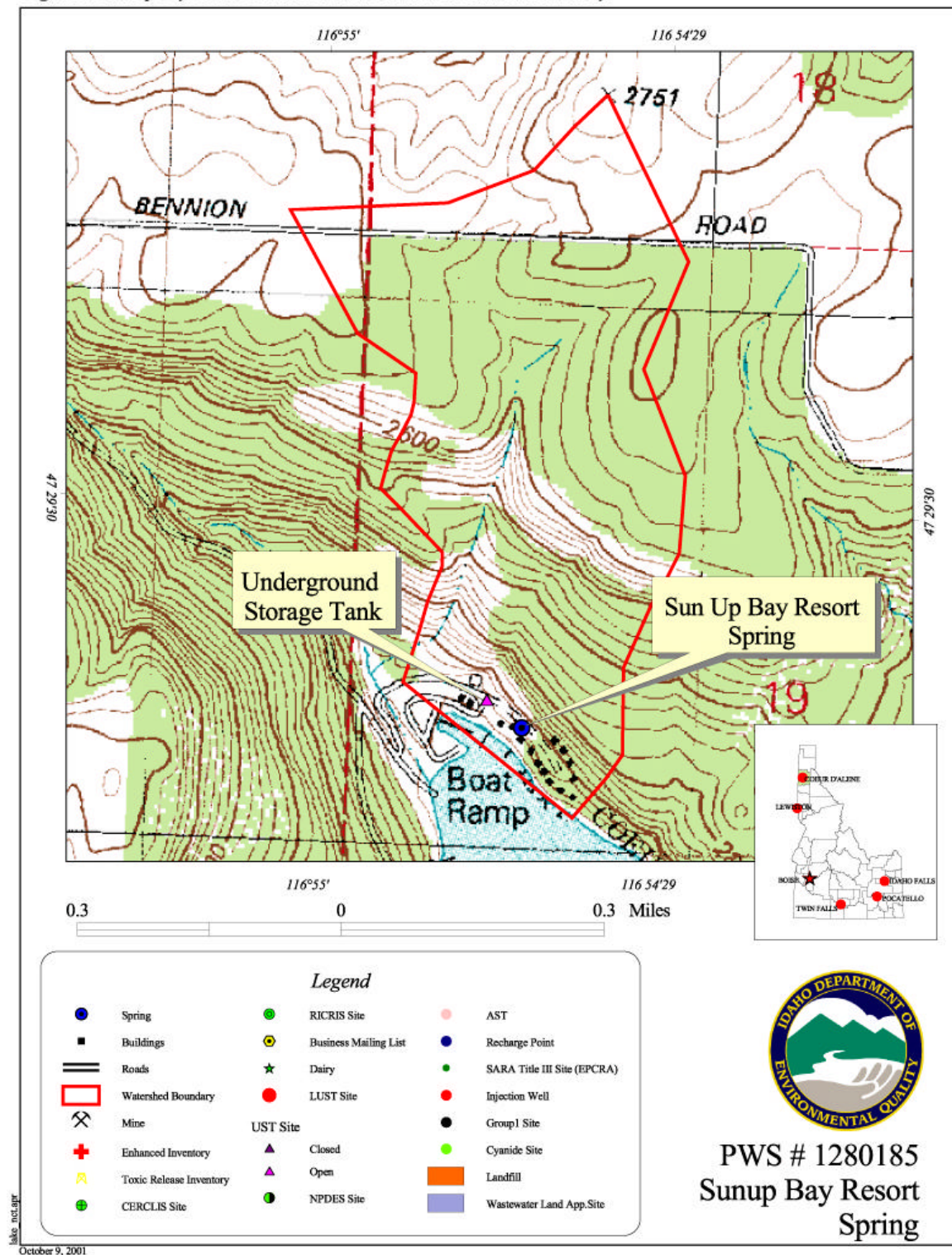
Because the Sun Up Bay Resort may not have direct jurisdiction over the entire recharge zone for its spring, it will be important to form partnerships with neighbors, and public agencies to regulate land uses that can degrade ground water quality. The goal of source water protection is to maintain current water quality for the future despite the changes we can expect with population growth in North Idaho.

For assistance in developing source water protection strategies please contact Tony Davis at the Coeur d'Alene Regional DEQ office at 208 769-1422.

DEQ website:

<http://www.deq.state.id.us>

Figure 1. Sun Up Bay Resort Delineation and Potential Contaminant Inventory.



Susceptibility Report					
Public Water System Name :	SUN UP BAY RESORT				
Public Water System Number :	1280185				
10/9/01 11:15:57 AM	Source:	SPRING			
1. System Construction		Score			
Intake structure properly constructed	NO. ACCESS RISER NEEDS TO BE HIGHER	1			
Infiltration gallery	YES	0			
Total System Construction Score		1			
		IOC	SOC	VOC	Microbial
2. Potential Contaminant Source / Land Use		Score	Score	Score	Score
Predominant land use type (land use or cover)	UNDEVELOPED WOODLAND	0	0	0	0
Farm chemical use high	NO	0	0	0	0
Significant contaminant sources *	YES. NATURALLY OCCURRING BACTERIA	0	0	0	*HIGH
Sources of class II or III contaminants or microbials in watershed	UNDERGROUND STORAGE TANK DOWN GRADIENT FROM SPRING	0	0	0	0
Agricultural lands within 500 feet of source	NO	0	0	0	0
Three or more contaminant sources in watershed	NO	0	0	0	0
Sources of turbidity in the watershed	YES GRAVEL ROAD	1	1	1	1
Total Potential Contaminant Source / Land Use Score		1	1	1	*HIGH
3. Final Susceptibility Source Score		2	2	2	2
4. Final Source Ranking		LOW	LOW	LOW	*HIGH

*High due to presence of potential contaminant source in Sanitary Setback Zone.

The final scores for the susceptibility analysis were determined using the following formulas:

- 1) VOC/SOC/IOC Final Score = System Construction + (Potential Contaminant/Land Use x 0.27)
- 2) Microbial Final Score = System Construction + (Potential Contaminant/Land Use x 0.35)

Final Susceptibility Ranking:

- 0 - 5 Low Susceptibility
- 6 - 12 Moderate Susceptibility
- > 13 High Susceptibility

POTENTIAL CONTAMINANT INVENTORY LIST OF ACRONYMS AND DEFINITIONS

AST (Aboveground Storage Tanks) – Sites with aboveground storage tanks.

Business Mailing List – This list contains potential contaminant sites identified through a yellow pages database search of standard industry codes (SIC).

CERCLIS – This includes sites considered for listing under the **Comprehensive Environmental Response Compensation and Liability Act (CERCLA)**. CERCLA, more commonly known as Superfund is designed to clean up hazardous waste sites that are on the national priority list (NPL).

Cyanide Site – DEQ permitted and known historical sites/facilities using cyanide.

Dairy – Sites included in the primary contaminant source inventory represent those facilities regulated by Idaho State Department of Agriculture (ISDA) and may range from a few head to several thousand head of milking cows.

Deep Injection Well – Injection wells regulated under the Idaho Department of Water Resources generally for the disposal of stormwater runoff or agricultural field drainage.

Enhanced Inventory – Enhanced inventory locations are potential contaminant source sites added by the water system. These can include new sites not captured during the primary contaminant inventory, or corrected locations for sites not properly located during the primary contaminant inventory. Enhanced inventory sites can also include miscellaneous sites added by the Idaho Department of Environmental Quality (DEQ) during the primary contaminant inventory.

Floodplain – This is a coverage of the 100year floodplains.

Group 1 Sites – These are sites that show elevated levels of contaminants and are not within the priority one areas.

Inorganic Priority Area – Priority one areas where greater than 25% of the wells/springs show constituents higher than primary standards or other health standards.

Landfill – Areas of open and closed municipal and non-municipal landfills.

LUST (Leaking Underground Storage Tank) – Potential contaminant source sites associated with leaking underground storage tanks as regulated under RCRA.

Mines and Quarries – Mines and quarries permitted through the Idaho Department of Lands.)

Nitrate Priority Area – Area where greater than 25% of wells/springs show nitrate values above 5mg/l.

NPDES (National Pollutant Discharge Elimination System) – Sites with NPDES permits. The Clean Water Act requires that any discharge of a pollutant to waters of the United States from a point source must be authorized by an NPDES permit.

Organic Priority Areas – These are any areas where greater than 25 % of wells/springs show levels greater than 1% of the primary standard or other health standards.

Recharge Point – This includes active, proposed, and possible recharge sites on the Snake River Plain.

RICRIS – Site regulated under **Resource Conservation Recovery Act (RCRA)**. RCRA is commonly associated with the cradle to grave management approach for generation, storage, and disposal of hazardous wastes.

SARA Tier II (Superfund Amendments and Reauthorization Act Tier II Facilities) – These sites store certain types and amounts of hazardous materials and must be identified under the Community Right to Know Act.

Toxic Release Inventory (TRI) – The toxic release inventory list was developed as part of the Emergency Planning and Community Right to Know (Community Right to Know) Act passed in 1986. The Community Right to Know Act requires the reporting of any release of a chemical found on the TRI list.

UST (Underground Storage Tank) – Potential contaminant source sites associated with underground storage tanks regulated as regulated under RCRA.

Wastewater Land Applications Sites – These are areas where the land application of municipal or industrial wastewater is permitted by DEQ.

Wellheads – These are drinking water well locations regulated under the Safe Drinking Water Act. They are not treated as potential contaminant sources.

NOTE: Many of the potential contaminant sources were located using a geocoding program where mailing addresses are used to locate a facility. Field verification of potential contaminant sources is an important element of an enhanced inventory.

Where possible, a list of potential contaminant sites unable to be located with geocoding will be provided to water systems to determine if the potential contaminant sources are located within the source water assessment area.